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Identifier: Josuke NAKATA

F-8437

AMENDMENTS TO THE DRAWINGS:

Please find accompanying this response a replacement sheet for Fig. 22
wherein amendments explained in the Remarks presented below are effected.

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REMARKS

Applicant has amended Figure 22 to illustrate a diagram of Figure 21.

Claims 1, 3 and 4 are cancelled. Claims 2 and 5-17 are pending including allowed claims 13 and 14 and new claims 15-17. Applicant expresses appreciation to the Examiner for allowing claims 13 and 14 and Applicant has amended Claim 13 so that the orientation of the semiconductor elements is as illustrated in the figures but Applicant has not amended the substantive and patentable features of the claim. Furthermore, claims 15-17 contain the subject matter of original claims 1, 3 and 4 as well as further recitations to distinguish the claims over the art.

Claims 1-6, 8 and 11-12 are rejected under 35 USC § 102 (b) as being anticipated by Ketsusako et al (JP 9-162434A). Claims 7 and 10 are rejected under 35 USC § 103(a) as being unpatentable over Ketsusako as modified by Nakata I (US 6744073). Claims 7 and 10 are rejected under 35 USC § 103(a) as being unpatentable over Ketsusako as modified by Nakata II (US 6204545). Inasmuch as the rejections are applicable to pending claims 2, 5-13 and 15-17, Applicant respectfully traverses the rejections as follows.

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Claim 15 provides for the following features of the invention:

- (a) the conductive wires are flexible;
- (b) the covering material is flexible;
- (c) the plurality of semiconductor elements in each column are disposed with the electrodes positioned perpendicularly to the axial direction of the column; and
- (d) the plurality of semiconductor elements in each column are disposed so that there is a space between adjacent semiconductor elements allowing for flexure of the column.

Accordingly, the invention as claimed provides for a semiconductor device that is flexible.

Comparing the claimed invention with Ketsusako each spherical element in the reference is disposed tightly against each surrounding element (see Figure 1 of Ketsusako), without a space therebetween as now claimed. Accordingly, the resulting structure is incapable of being flexed as with the claimed invention and the reference fails to anticipate or render obvious the claimed invention.

Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051 (Fed. Cir. 1987) ("a claim is anticipated only if each and every element as set forth in the claim" is found in the cited prior art reference). *Richardson v.*

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Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USP2d 1913, 1920 (Fed. Cir. 1989) (an anticipating reference must show “the identical invention...in as complete detail as is contained in the claim”); *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974) (a *prima face* case of obviousness is established only where the combination of cited references teaches or suggests each limitation in the claim). Furthermore, Ketsusako teaches that the solar battery is a panel type battery covered by *hard* sealing resin 36 (Figure 6). In yet another example (Figure 11), Ketsusako teaches that the solar panel is provided with a *hard* curved structure for using on the roof of house. Accordingly, Ketsusako cannot be modified to provide a flexible structure. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 U.S.P.Q. 303 (Fed. Cir. 1983) (a “reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention”); *In re Leonard R. Kahn*, 441 F.3d 997 (Fed. Cir. 2006) (a reference teaches away when the skilled artisan would be “discouraged from following the path set out in the reference, or would be led in a direction divergent from the path taken by the applicant”).

Turning to Nakata I, the reference teaches a *rigid metal* lead frame for connecting spherical semiconductor devices (Figure 7, *et. seq.*, and col. 8, ln. 15, *et. seq.*). As with Ketsusako, the application of rigid metal frame leads away from the claimed flexible wire providing a parallel connection between

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cells in the same column and a series connection between cells of adjacent columns. As such, Ketsusako and Nakata I fail to render unpatentable the claimed invention.

In Nakata II, Figures 23 and 26 provide spherical solar cells 200 in each column that are disposed tightly without a space between adjacent cells. Accordingly, the structure is not capable of flexing about each cell as claimed and the claims are patentable thereover. Furthermore, the solar cells in Nakata II are connected by rigidly soldering electrodes from the adjacent cells so that the axis between opposing electrodes is parallel with the long axis of each column. This is inapposite with the claimed configuration where an axis between the opposing electrodes is perpendicular to the long axis of the column. As such, the claimed invention is further distinguished from and patentable over Nakata II. *In re Mills*, 916 F.2d 680, 682 16 U.S.P.Q.2d 1430, 1432 (Fed. Cir. 1990) (the combination of references much teach each claimed element in the claimed configuration).

In light of the foregoing, the application is now believed to be in proper form for allowance of all claims and notice to that effect is earnestly solicited.

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In light of the foregoing, the application is now believed to be in proper form for allowance of all claims and notice to that effect is earnestly solicited.

Respectfully submitted,

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